



GLYPH

DOT MARKER

USER MANUAL

AMXMAN-12-01 REV 2

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G·L·Y·P·H

1: The Glyph

The Glyph is a custom non-contact drop-on-demand marking system offered as one of the options available with our automated cutters. Due to controller limitations, this option is not available with all machine versions. Please contact Autometrix directly with compatibility questions.

The Glyph is unique compared to other non-contact printing solutions for automated cutting systems. It is a self-contained unit, easy to put on and take off your cutting machine. Because all ink is stored within the unit, no external ink supply is required. The electronic controller is also housed in the same body, so the connections to the cutter are limited to an airline and electrical plug.

Assemblies

1. Printing Assembly

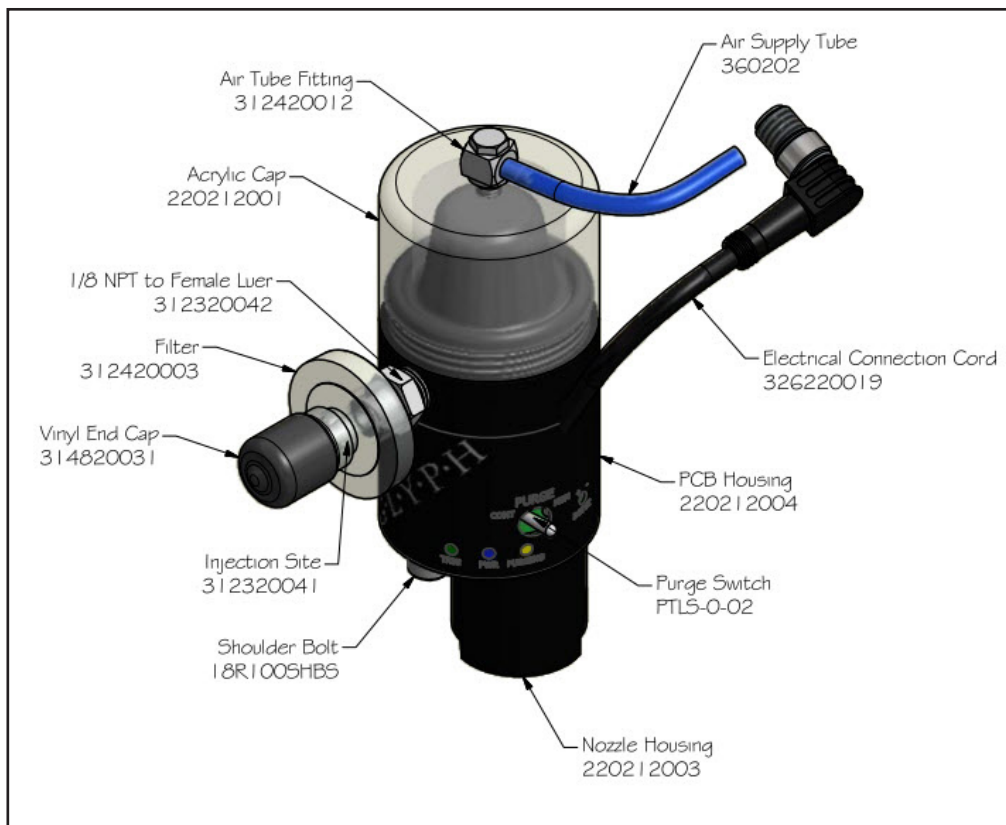


Fig. 1.1

The Printing Assembly (see Fig. 1.1) houses the ink supply, the unit's electronic controller, and the printing valve. While the ink supply reservoir may seem small, it contains enough ink to complete an average of 10,000 linear inches of printing (set at 20 DPI, with a 0.003" nozzle). You can quickly check your ink level by looking at the diaphragm position under the transparent cap.

There are several user controls and indicators on the outside of the assembled unit. The main user control is the purge switch. This activates the valve to quickly purge ink from the system. The purge switch is used to test ink flow after cleaning the system.

When the purge switch is pushed to the right, it acts as a momentary switch ("MOM"). When you release it, it returns to the central "off" position. When switched to the left ("CONT"), it remains in the "on" or continuous position until physically switched back to the central "off" position.

Important! Have a rag or container in position to catch the purged ink!

Another user control is the dot size setting. (See Fig. 1.2) You will want to use the smallest dot size possible. Small dots create clean small text and eliminate puddles on non-absorbent materials. Larger dot sizes are needed on fuzzy materials or when printing wide lines.

A small flathead screw driver is required to adjust this setting. Rotating this control counter clockwise (towards the "+") will increase the amount of ink released for each dot, while rotating clockwise (towards the "-") will decrease the amount. This effectively changes your dot size, though the adjustability of this option is limited. Adjusting your low pressure pneumatic supply (see Section 2) will have a more direct effect, pushing more ink through while the valve is open. Also, see "Software Settings" for further information.



Fig. 1.2

Three indicator lights are also visible. (See Fig. 1.3) The green Trigger Indicator light ("TRIG") is on whenever the Glyph is firing dots. This happens when it receives a trigger pulse from the machine controller or when you are purging your Glyph. When plotting at higher speeds, this light will flicker so fast that it appears to be on continuously.

The blue Power Indicator (“PWR”) is on whenever the cutter is turned on and the Glyph is plugged in.



Fig. 1.3

The yellow Purging Indicator (“PURGING”) is on whenever the purging switch is in either the momentary (“MOM”) or the continuous (“CONT”) position.

The printing valve can be easily accessed by removing a single shoulder bolt. (See Fig. 1.4)

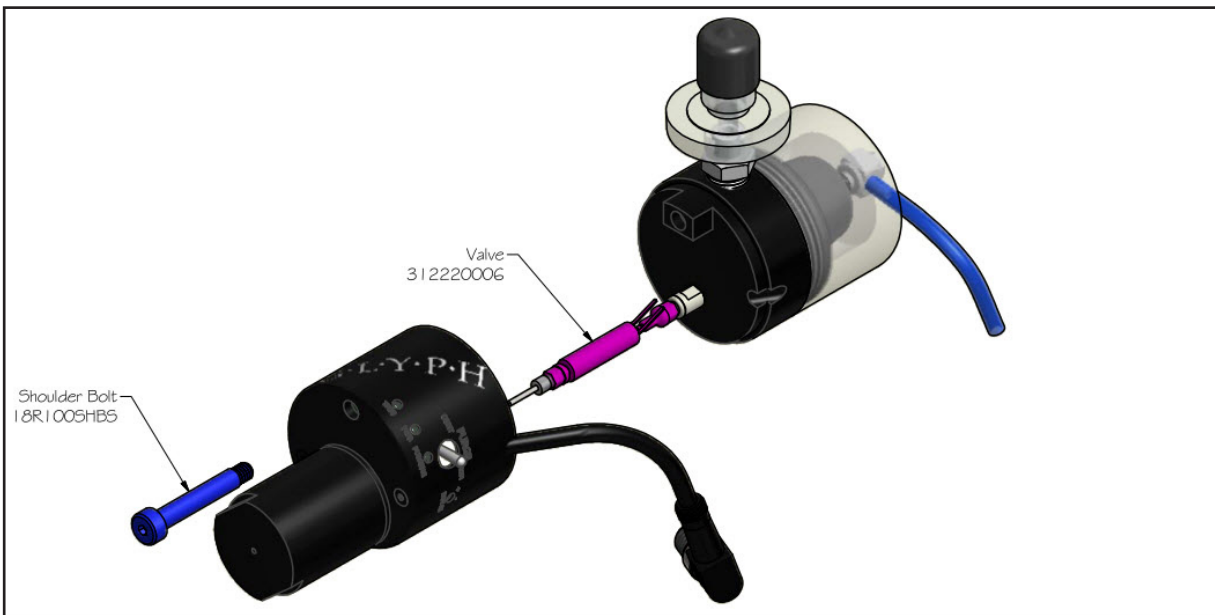


Fig. 1.4

The printing valve is combined with a filter to protect it from particulates in the ink and with a nozzle which directs the flow and controls the ink dot size.

2. Pneumatic Supply

In addition to requiring power and a control signal, the Glyph needs a low-pressure pneumatic supply to pressurize the ink reservoir. This causes an ink dot to be discharged from the nozzle each time the valve opens. Without sufficient pressure, each dot is not cleanly fired onto the material being marked. This can result in a puddle of ink forming around the nozzle.

A simple pneumatic supply is provided with your Glyph. (See Fig. 1.5) In the center is a digital pressure gauge. Directly below it is a knob to adjust the pressure. To the right is a pneumatic on-off switch. If your switch is in the “off” position, your gauge pressure should read zero.

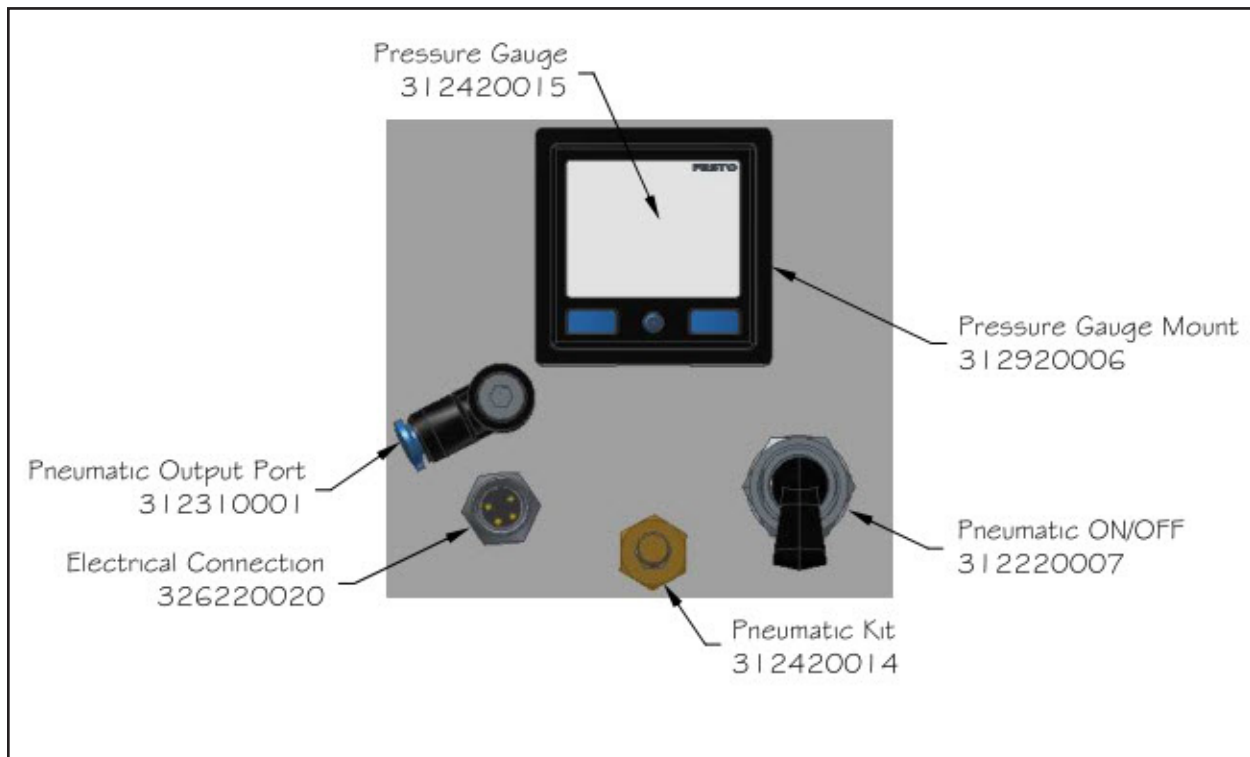


Fig. 1.5

The regulator can provide pressures between 0 and 15 PSI. We recommend a supply pressure between 4 and 12 PSI, depending on what size dot you require for your marking application. Pressure readings below 4 or above 12 PSI are displayed in red to indicate caution. Pressures within the recommended range are displayed in green. The pressure regulator is very sensitive. Experiment with the pressure settings until you find a pressure that gives you good results. Usually 5-7 PSI is a good place to start.

The pneumatic hose on the Glyph body should be plugged in to the pneumatic output port on the left side of the Glyph pneumatic supply. Directly below the pneumatic port is the electrical connector, providing both power and signal. This connector is directional, so the plug cannot be connected incorrectly.

3. Refiller

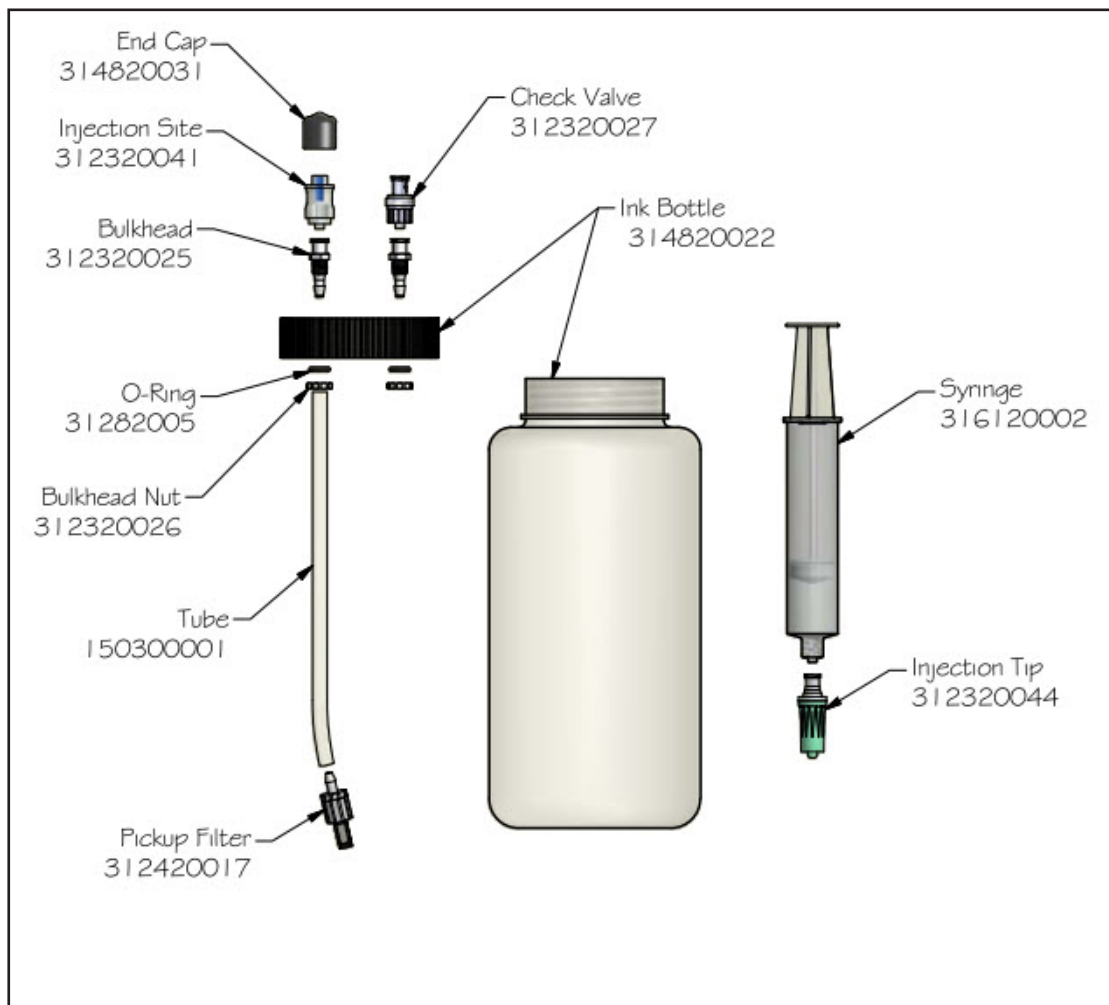


Fig. 1.6

A syringe and filling bottle (see Fig. 1.6) allow for fast, clean refilling of the Glyph's onboard ink reservoir. Ink is drawn from the filling bottle by attaching the syringe to the dry break fitting on top of the cap and pulling the syringe plunger back slowly. The full syringe can now be disconnected from the filling bottle.

It is recommended that the filling bottle be opened and refilled from the supplier's ink bottle away from the machine and in an area where any spilled ink will not cause damage.

Software Settings

To properly use the Glyph, software settings within PatternSmith must be adjusted. Please refer to your software user manual to learn how to set the plotting tool as a "Dot Mark". Also learn how to adjust the Dots Per Inch (DPI) and plotting speeds for both text and standard plotting.

The internal valve in the Glyph determines your maximum plotting speed. We recommend a maximum plotting speed of 40 in/s at 20 DPI. If you require more, contact Autometrix customer service. Your DPI can be increased by decreasing the plotting speed.

Maintenance

General maintenance can and should be performed by the customer.

1. Cleaning:

Cleaning the filter and nozzle regularly will ensure reliable performance from the Glyph. If you find that a higher pressure is required to continue printing, the filter or the nozzle may need cleaning. The printing assembly can easily be removed from your cutting machine by turning off the low pressure pneumatic supply, unplugging the quick-release air connection, and disconnecting the electrical connector.

1. If the ink flow from your Glyph seems to be impeded, first wipe the tip of the nozzle with an alcohol or acetone dampened rag to remove any dried ink.
2. If this does not solve the problem, remove the nozzle housing and gently unscrew the entire nozzle. (See Fig. 1.7)
3. The nozzle can now be flushed with a squirt from an alcohol or acetone bottle, from either direction.

4. Once fluid passes cleanly through the nozzle, reassemble the Glyph and use the purge switch to check for ink flow.

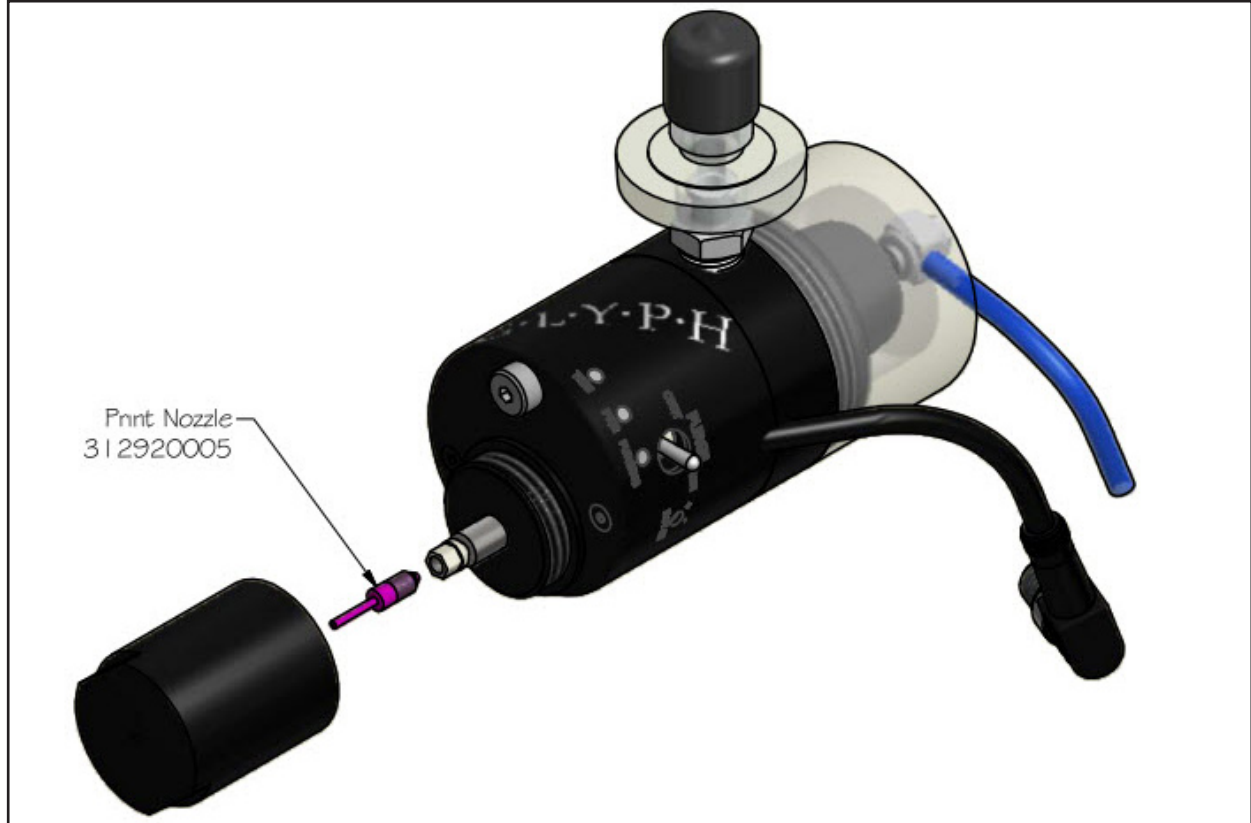


Fig. 1.7

If the nozzle does not prove to be the source of the obstruction, the Glyph filter may need to be cleaned or replaced. This filter is essential to protect the more expensive components in the Glyph.

1. Using a 3/32" Allen wrench, carefully unscrew the shoulder bolt (see Fig. 1.4) and remove the lower portion of Glyph body.
2. Unplug the valve from the lower body so that the controller board in the body can be placed away from the valve and the ink reservoir. Be careful not to get ink on any of the electronics.
3. Unscrew the valve from the filter and then remove the filter from the threaded nipple. (See Fig. 1.8)
4. Flush the filter with a squirt from an alcohol or acetone bottle from the male threaded end. (See Fig. 1.9)
5. Once fluid passes cleanly through the filter, reassemble the Glyph and use the purge switch to check for ink flow.

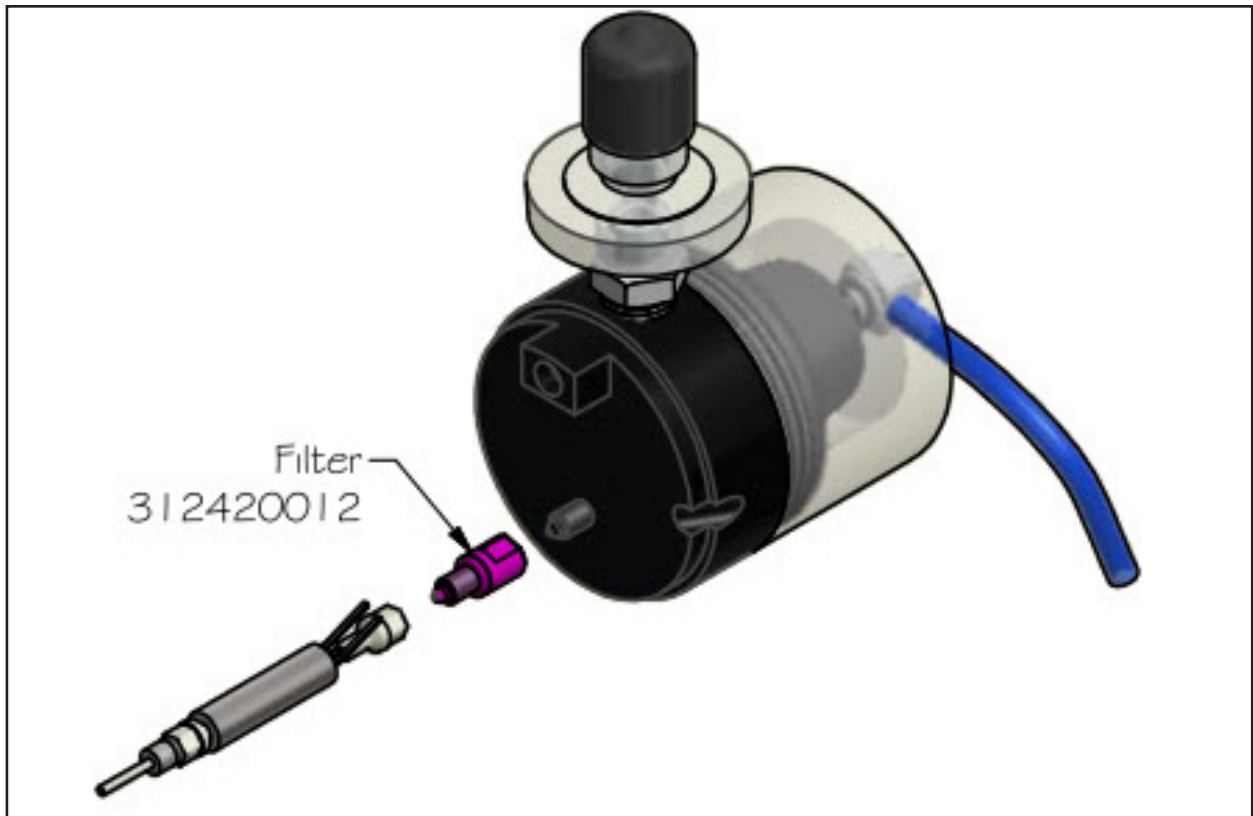


Fig. 1.8

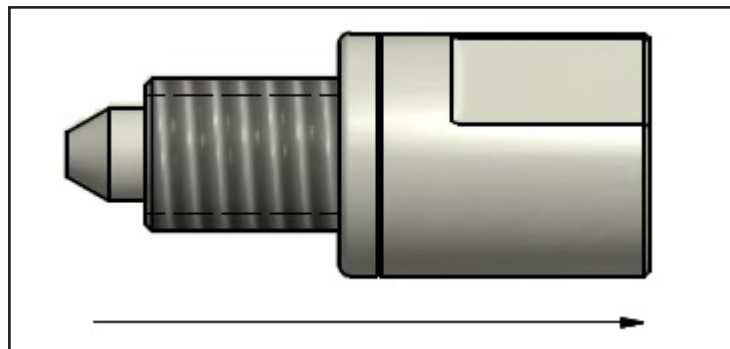


Fig. 1.9

When necessary, both the filter and nozzle can be individually replaced. You may want to have several on hand to prevent downtime.

The printing valve itself can also fail as it ages. This is also a simple replacement to complete.

Over time, the alcohol in the ink will wear down the diaphragm separating the ink reservoir from the low-pressure supply. Engineering testing has shown the diaphragm to last for at least two years without any failure observed.

2. Refilling the Ink Reservoir

Refilling the Glyph's reservoir is easily accomplished with the provided syringe and filling bottle. To help avoid ink spills in unwanted areas, we recommend that this bottle be filled with ink in a place away from the machinery.

Important! Before connecting the syringe to the Glyph, turn off the low-pressure supply. Flip the pneumatic switch to the "off" position (down). The pressure gauge should read about 0 PSI, in red.

1. Remove the black rubber cap from the top of the filling bottle. Twist the green luer fitting on the end of your syringe to connect it with the clear/blue one on the filling bottle lid. Fluid cannot flow through each individual connector of these dry break connections. It can, however, flow freely when they are connected,

2. Once connected, pull the plunger on your syringe slowly back to draw ink into the barrel. Note that your Glyph reservoir can hold a maximum of 17cc, so if the reservoir is completely empty, fill your syringe to the 17cc mark. When the desired amount of ink is in the syringe, hold the luer fittings and rotate counter clockwise to disconnect. Wipe any spilled ink and replace the black rubber cap to keep things clean.

3. Remove the black rubber cap from the front of the Glyph and reconnect the syringe to the dry break connector. Push the syringe plunger and watch as the diaphragm in the top of the Glyph rises. The filter on the front of the Glyph protects the valve internals from damage, but also means that firm, even pressure is required to force ink through it.

4. When the diaphragm is fully expanded, rising almost to the top of the transparent cover, stop pushing the plunger.

5. Disconnect the dry break fitting as before and clean any ink on the fitting to avoid a buildup. Replace the black rubber cap to keep things clean. Your Glyph is now ready to continue plotting.

If your Glyph runs out of ink during a job, simply pause the job, refill the ink reservoir, and complete the job.

3. Removing Air Bubbles

Air bubbles may work their way into the reservoir when refilling it with ink and rise to the top of your reservoir. These cannot be purged from the system in normal use. Over time, the air buildup may be enough that you notice that less printing is possible between refills, while the diaphragm level still appears to be full. To remove the air from the reservoir, follow the steps below:

1. Remove the Glyph from your cutter.
2. Remove the black rubber cap from the front of the Glyph and connect an EMPTY filling syringe to the exposed dry break connector.
3. Pull the syringe plunger back slowly, drawing all the ink and air out from the reservoir. You should be able to see the diaphragm collapse as the reservoir empties.
4. With the Glyph laying horizontally so the syringe is now vertical (pointing down), the air bubble in the syringe floats to the top. Push the plunger back in to push ink back into the reservoir, but stop before pushing air back in.
5. Disconnect the syringe from the Glyph and now remove the dry break connector from the end of the syringe. You can now expel the air from the syringe. Replace the dry break connector and use the syringe to fill the reservoir with any required additional ink.
6. Wipe all connectors and replace all black rubber caps.

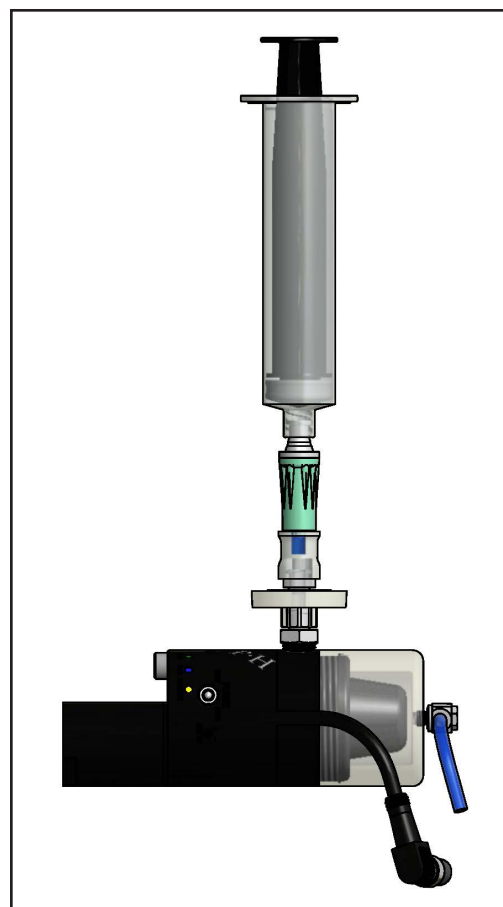


Fig. 1.10

4. Diaphragm Replacement

If the diaphragm appears to be drying or cracking, it may need to be replaced.

1. Remove the main shoulder bolt that holds the lower portion of the Glyph body to the reservoir (fig. 1.4). Unplug the valve and set the lower portion aside so the electronics are not exposed to ink during this maintenance process.
2. Follow the procedure for removing air bubbles (section 3) to empty the reservoir of all ink.
3. Remove the clear cap and clean all parts with alcohol.
4. Insert a new diaphragm into the clear cap and then reassemble the parts.
5. Reassemble the entire glyph and use the syringe to refill the reservoir.